6. THE CLAIMS

It is claimed:

1. An optical transmitter for transmitting a first output data signal and a second output data signal, the optical transmitter comprising:

a) a phase-locked-loop, the phase-locked-loop operable to receive a reference clock signal;

b) a clock-recovery circuit, the clock-recovery circuit coupled to the phase-locked-loop, the clock-recovery circuit operable to receive a first input data signal;

c) a first latch-decision circuit, the first latch-decision circuit coupled to the clock-recovery circuit;

d) a first latch, the first latch coupled to the first latch-decision circuit, the first latch operable to receive the first input data signal;

e) a first electro-optical converter, the first electro-optical converter coupled to the first latch, the first electro-optical converter operable to transmit the first output data signal;

f) a second latch-decision circuit, the second latch-decision circuit coupled to the clock-recovery circuit;

g) a second latch, the second latch coupled to the second latch-decision circuit, the second latch operable to receive the second input data signal; and

h) a second electro-optical converter, the second electro-optical converter coupled to the second latch, the second electro-optical converter operable to transmit the second output data signal.

2. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 1, wherein the phase-locked-loop is operable to generate a plurality of clock signals that have a frequency higher than the frequency of the reference clock signal.

3. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 1, wherein the phase-locked-loop is operable to generate a plurality of clock signals that have a frequency higher than the frequency of the reference clock signal and wherein at least one of the plurality of clock signals has a phase that is not equal to the phase of the reference clock signal.

4. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 1, wherein the clock-recovery circuit is operable to extract timing information from the first input data signal.

5. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 1, wherein the first latch-decision circuit, based upon timing information received from the clock-recovery circuit, is operable to determine a time to latch the first input data signal.

6. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 1, wherein the first latch-decision circuit is operable to receive

the first input data signal.

7. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 1, wherein the first latch-decision circuit is operable to receive the first input data signal and the second latch-decision circuit is operable to receive the second input data signal.

8. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 1, wherein the first latch-decision circuit is operable to receive the first input data signal and, based upon information extracted from the first input data signal and timing information received from the clock-recovery circuit, is operable to determine a time to latch the first input signal.

9. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 1, wherein the first electro-optical converter includes a laser.

10. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 1, wherein the first electro-optical converter is operable to generate an optical signal that is compliant with an optical signal defined in the InfiniBand specification.

11. An optical transmitter for transmitting a first output data signal and a second output data signal, the optical transmitter comprising:

a) a phase-locked-loop, the phase-locked-loop operable to receive a reference clock signal;

b) a clock-recovery circuit, the clock-recovery circuit coupled to the phase-locked-loop, the clock-recovery circuit operable to receive a first input data signal;

c) a latch-decision circuit, the latch-decision circuit coupled to the clock-recovery circuit;

d) a first latch, the first latch coupled to the latch-decision circuit, the first latch operable to receive the first input data signal;

e) a first electro-optical converter, the first electro-optical converter coupled to the first latch, the first electro-optical converter operable to transmit the first output data signal;

f) a second latch, the second latch coupled to the latch-decision circuit, the second latch operable to receive the second input data signal; and

g) a second electro-optical converter, the second electro-optical converter coupled to the second latch, the second electro-optical converter operable to transmit the second output data signal.

12. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 11, wherein the phase-locked-loop is operable to generate a plurality of clock signals that have a frequency higher than the frequency of the reference clock signal.

13. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 11, wherein the phase-locked-loop is operable to generate a plurality of clock signals that have a frequency higher than the frequency of the reference clock signal and wherein at least one of the plurality of clock signals has a phase that is not equal to the phase of the reference clock signal.

14. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 11, wherein the clock-recovery circuit is operable to extract timing information from the first input data signal.

15. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 11, wherein the latch-decision circuit, based upon timing information received from the clock-recovery circuit, is operable to determine a time to latch the first input signal and the second input signal.

16. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 11, wherein the latch-decision circuit is operable to receive the first input data signal.

17. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 11, wherein the first latch-decision circuit is operable to receive the first input data signal and, based upon information extracted from the first input data signal and timing information received from the clock-recovery circuit, is

operable to determine a time to latch the first input signal..

18. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 11, wherein the first electro-optical converter includes a laser.

19. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 11, wherein the first electro-optical converter is operable to generate an optical signal that is compliant with an optical signal defined in the InfiniBand specification.

20. An optical transmitter for transmitting a first output data signal and a second output data signal, the optical transmitter comprising:

a) a phase-locked-loop, the phase-locked-loop operable to receive a reference clock signal;

b) a clock-recovery circuit, the clock-recovery circuit coupled to the phase-locked-loop, the clock-recovery circuit operable to receive a first input data signal;

c) a latch-decision circuit, the latch-decision circuit coupled to the clock-recovery circuit;

d) a latch, the latch coupled to the latch-decision circuit, the latch operable to receive the first input data signal and the second input data signal;

e) a first electro-optical converter, the first electro-optical converter coupled to the latch, the first electro-optical converter operable to transmit the first output data signal; and

f) a second electro-optical converter, the second electro-optical converter coupled to the latch, the second electro-optical converter operable to transmit the second output data signal.

21. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 20, wherein the phase-locked-loop is operable to generate a plurality of clock signals that have a frequency higher than the frequency of the reference clock signal.

22. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 20, wherein the phase-locked-loop is operable to generate a plurality of clock signals that have a frequency higher than the frequency of the reference clock signal and wherein at least one of the plurality of clock signals has a phase that is not equal to the phase of the reference clock signal.

23. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 20, wherein the clock-recovery circuit is operable to extract timing information from the first input data signal.

24. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 20, wherein the latch-decision circuit, based upon timing information received from the clock-recovery circuit, is operable to determine a time to

latch the first input signal and the second input signal.

25. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 20, wherein the latch-decision circuit is operable to receive the first input data signal.

26. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 20, wherein the first latch-decision circuit is operable to receive the first input data signal and, based upon information extracted from the first input data signal and timing information received from the clock-recovery circuit, is operable to determine a time to latch the first input signal.

27. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 20, wherein the first electro-optical converter includes a laser.

28. The optical transmitter for transmitting the first output data signal and the second output data signal of claim 20, wherein the first electro-optical converter is operable to generate an optical signal that is compliant with an optical signal defined in the InfiniBand specification.